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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,363	08/19/2003	Mark Christofis	46107-0102	4832

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EXAMINER

ALEXANDER, MICHAEL P

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/643,363	<b>Applicant(s)</b> CHRISTOFIS ET AL.	
	<b>Examiner</b> Michael P. Alexander	<b>Art Unit</b> 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**    †

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                         |                                                                             |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                                |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____                                                             | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

Claim(s) 22-29 is/are pending.

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 December 2005 has been entered.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 22-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 22, the specification does not describe an article formed by an induction heat treatment that is applied concurrently to a first pair that includes a trunnion shoulder surface and a trunnion surface that corresponds to said trunnion

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shoulder surface, and thereafter is applied to each such pair consecutively until each such pair has been heat treated.

Claims 23-29 are rejected in that they depend from claim 22.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 22-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizokoshi (US 5,098,342) in view of the admitted prior art (see paragraphs 0003-0004 of the instant specification).

Regarding claim(s) 22, Mizokoshi teaches (see Fig. 1)) an article, comprising a hub, a plurality of angularly spaced trunnion shoulders extending from the hub, each having a trunnion shoulder surface, and a corresponding angularly spaced trunnion extending from each trunnion shoulder, each trunnion having a trunnion axis and a trunnion surface.

Still regarding claim 22, Mizokoshi does not specify that the trunnion surfaces and the trunnion shoulder surface would comprise a hardened case and Mizokoshi does not specify that the hardened case would be formed by an induction heat treatment that is applied concurrently to a first pair that includes a trunnion shoulder surface and a trunnion surface that corresponds to said trunnion shoulder surface, and thereafter is applied to each such pair consecutively until each such pair has been heat treated.

With respect to the limitation that the trunnion surfaces and the trunnion shoulder surfaces would comprise a hardened case in claim 22, applicant admits as a prior art (0003-0004) a method of heat treatment to form a hardened case by carburizing on the surface of the trunnions in order to provide the strength in the load bearing areas of the outer surface, and the necessary toughness and fatigue resistance in the core. It would have been obvious to one of ordinary skill in the art to modify the article of Mizokoshi by applying a heat treatment to form a hardened case by carburizing on the surface of the trunnions in order to provide the strength in the load bearing areas of the outer surface, and the necessary toughness and fatigue resistance in the core as admitted.

With respect to the limitation that the hardened case would be formed by an induction heat treatment that is applied concurrently to a first pair that includes a trunnion shoulder surface and a trunnion surface that corresponds to said trunnion shoulder surface, and thereafter is applied to each such pair consecutively until each such pair has been heat treated in claim 22, the Examiner asserts that this is a product-by-process limitation. The Examiner further asserts that the claimed article would be the same as or obvious from the article of Mizokoshi as heat treated by the method of

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the prior art. See MPEP 2113. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made a different process."

Regarding claim 23, the Examiner asserts that the claimed process steps are product-by-process limitations. The Examiner further asserts that the claimed article would be the same as or obvious from the article of Mizokoshi as heat treated by the method of the admitted prior art. See MPEP 2113.

Regarding claim 24, applicant admits (0003) that the method of the prior art would result in a hardened case comprising a martensitic microstructure and a core comprising a microstructure that is a mixture of pearlite and ferrite.

Regarding claim 25, applicant admits (0003) that the method of the prior art would result in a hardened case having a hardness of about Rc 58-63 and a core having a hardness of about Rc 15-30.

Regarding claim 26, applicant admits (0003) that the method of the prior art would result in a tempered martensitic microstructure.

Regarding claim 27 that the tempered martensitic microstructure would be formed by induction heat treatment, the Examiner asserts that this is a product-by-process limitation. The Examiner further asserts that the claimed article would be the

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same as or obvious from the article of Mizokoshi as heat treated by the method of the admitted prior art. See MPEP 2113.

Regarding claim 28, applicant admits (0003) that the method of the prior art would result in a tempered martensitic microstructure with a hardness of about Rc 58-63.

Regarding claim 29, applicant admits (0003) that the method of the prior art would result in a depth of the case of about 1-2 mm.

### ***Response to Arguments***

Applicant's arguments filed 30 December 2005 have been fully considered but they are not persuasive.

The applicant argues that the '342 patent discloses a carburizing process, which is not an induction heat treat process. The carburizing process of the '342 patent is applied to the entire component, rather than in a series of steps applied to a portion of the component, as disclosed and claimed in the present invention.

First, to clarify the record, the '342 does not disclose a carburizing process. The rejection is based on applying the carburizing process of the admitted prior art to the article of the '342 patent.

Second, the applicant's argument is that the article of the claimed invention is different from the article produced by the prior art carburizing process because the article of the invention is hardened only at a portion of the component, whereas the article produced by the prior art carburizing process is hardened on all its surfaces. In response, the Examiner would like to note that although the claims specify that a portion

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of the component would be hardened, the claims do not specify that only a portion of the component would be hardened. Since the claims use the transitional word "comprising", the scope of the claims include an article produced by the prior art carburizing process that is hardened on all its surfaces.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Alexander whose telephone number is 571-272-8558. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ROY KING   
SUPERVISORY PATENT EXAMINER  
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